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The Influence of The Snowball Throwing Learning Model on The Science Learning Outcomes of Grade 5 Students

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Snowball Throwing; Learning Outcomes; Primary School Tigabalata.

ABSTRACT

The research objective was to determine the significant difference between student science learning outcomes taught through the Snowball Throwing model and students taught through conventional learning in class V SD Plus Tigabalata. The study population was all students in grade V SD Plus Tigabalata Jorlang Hataran totaling 65 students. Science learning outcomes data were collected using an instrument in the form of a regular multiple-choice test. The t-test is this data. The results showed that there was a significant difference between students who took the Snowball Throwing model learning and students who took conventional learning (that = 2,562> t table = 2,000) with DB = 82 (Σn-2 = 84-2 = 82) and the level of significance 5%. So it can be concluded that the Snowball Throwing model has a significant effect on the learning outcomes of SD Plus class V IPA students in Tigabalata, Jorlang Hataran District.

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A. INTRODUCTION

Education has a very important role in the national and safe life, the life and development of the guaranteed itself. Law Number 20 of 2003 concerning Article 1 of the National Education System for education development: "Education is a conscious effort planned to realize the learning, with the aim that students actively speak the beliefs of pangenesis, active belief, mentality, and skills needed by society and the nation". Through tuition fees provided various learning opportunities to increase knowledge, skill, and attitude to can adapt to the life of the people. For that education must be based on four pillars education, which is (1) students studies

knowledge, (2) students use their knowledge to develop the skills, (3) students learn to use their knowledge and skills to live, and (4) students learn to realize that there is an interdependence so there needs to appreciate each other among the people. To achieve this aim, has a lot of efforts have been done by. In essence, humans live and learn in this world. Learning can be interpreted as the process of changing human behavior obtained through changing habits, imitation, experience, understanding, and appreciation, and through various human activities to achieve what they want (Yamin, 2015).

Learning is also defined as trying to change everyone's behavior. Doing some activities, such as reading, listening, following. In other words, learning is a form of psychophysical activity for all human characters (Fallis, 2013). Therefore, believe the purpose of education for the learning process is appropriate for students. Some efforts have been made by the government, namely the (1) upgrading curriculum, (2) courses teacher system-related learning, (3) providing facilities and supporting learning, (4) provision of materials and reference books, teaching, (5) and activities subject teachers (MGMP). Associated with effort on first, the curriculum in Indonesia has been refined into the curriculum of education (KTSP). KTSP demands changes in learning from passive, which have until now tended to theoretical, and centered for the teacher to learning that is active, creative, and productive, reference to problems contextual and centered on students so that to encourage students to find again and building that own (Muller, 2012).

School curriculum (KTSP) orientation on the subjects of science at the primary level referring to the level of development of the life of at that time, namely concrete and operational stage formal. According to Siahaan, Haloho, Guk-guk, & Panjaitan, (2021), learning will be effective if the activities of learning following the level of the intellectual development of students, and there is no learned apart from good works. This is due to the intellectual development of children and emotionally affected immediately by her involvement with the physically and mentally fits the surroundings perfectly. Learning through the activity of concrete to be very relevant to the level of development of students, so that learning will be meaningful and is kind of fun to learning activities. This would increase their interest students in the lessons science at the ground level so that it can be improved the motivation of students and students' ability to overwhelm the concept-concept of science so that it will have an impact on learning outcomes. Learning, teachers as facilitators must be able to choose and determine the approach, method, and learning model proper with a staple subject to be learned, so that learning can run effectively and the purpose of learning was reached (Agustina, 2017).

Natural Sciences (IPA) is the main subject taught in elementary school or madrasah ibtidaiyah which can be interpreted as a group of systematic knowledge arranged by relating natural phenomena and phenomena, material based on observations and induction (Juhji, 2018). Thus, science can be interpreted as theoretical knowledge (theoretical knowledge). From understanding this, it can be concluded that IPA is a collective knowledge that is formed systematically, studies, and studies the events that occur in the universe, both living things and inanimate objects. Obtained from an experience through a series of scientific activity processes such as observation, investigation, preparation, and testing of ideas that can be train students to think objectively and critically But in reality, the condition of being was expected to has not to materialize (H. M. Manurung & Manurung, 2021). Learning existing was carried out not see effectiveness and conformity learning model with a staple subject of to be told and teachers less creative in driving students to be able to integrate construction experience his life a day the outside of class that construction in class (Jannah & Junaidi, 2020). As a result, reaching its

objectives was the essential science education. It is proven of still learning the low quality of processes and results science in primary school.

Learning is a process in which behavior is engendered or changed through training and experience. Said "changed" his opinion is key, and of the word yourselves that studying is a change planned consciously through a program that prepared to produce certain positive behavior change (Latuapo, 2019). Arsyad, (2011)suggested in the learning process, only two very important elements are the model of learning and learning media. These two aspects are very connected. The selection of one particular learning model will affect learning, appropriate forms of media although many other aspects must be considered in choosing media learning. Nevertheless, it can be said that media learning is a tool in learning that also influences the climate the condition, and the learning environment laid out and created by teachers.

Low quality and science lessons in primary schools is the result of several studies (Siahaan, Haloho, et al., 2021); (Siahaan et al., 2020); (Wuryandani et al., 2014) show results that learning has not focused on understanding, science dominated by, teaching methods and not many take object the natural environment as a source of learning (only focused on textbooks). The findings second findings of this study indicate that the quality of the process and learning outcomes of science is still very low. Good benchmark success is learning outcomes. To basic competence described the properties of light. That reflects the low, besides its scope was broad and need to rote. The low level of learning outcomes possible also because the teacher had not yet fluent use the model or media and design scenario of learning which he adapted with material characteristics and the condition of Students that enables the student creative and active.

Teachers in the learning process still tend to be oriented to transfer knowledge possibly by an absence of variation model monotony without learning and development of media. This failing in achieving optimal student learning. Besides it applied still adhered to the traditional learning perspective, the learning-centered on teachers and students as a passive made object to a lot of information, lack of learning and learning the use of the media. On the fact, students who have character varied from teachers need a special touch. For that, teachers should be able to have brought them all involved and feel pleased with the teaching process. When processing learning, students do not often even look at the phenomena of real or a medium that deals with the matter discussed. The majority of matter and for the delivery of material is centered on the books of the students rarely are called upon to view the clear an occurrence or a phenomenon, or media nationally representative media with the phenomenon to be the related. It is to have the children less able to understand the concept-concept that are experiencing high levels of abstract so that students will be less motivated to learn it.

Resting on this reality to stimulate and enhancing the role of active students both individually and the group in the process of learning, so the problem has to be dealt with looking for some alternative type of learning and media precise accordance with the materials given a supporting role of learning. In their experiences, teachers do not only are required to convey the subject matter, but they have to be able to carry out play its strategic role to form the remembrance of the students through the development of personality and values apply (Hanafy, 2014). Of all problems described above, it takes the alleged act capable of being searched for the solutions. One is the use of the model and development media right, education which can make all the model of students engaged in the be harmonized with development media education learning appropriate as a mediator the central transforming learning. Requiring teachers can choose model education to encourage spirit each student to actively be involved in experience study, thus it will end up at increasing learning achievements. One of its models to try out in

learning science is the Snowball Throwing learning model they can develop students to solve problems, reason, communication, confidence, and representation. Learning model snowball throwing consisting of five of the delivery of goals and motivation, information, the students in the group, guiding working group and learning, and evaluation. The learning model is applied to learning to achieve competence that has been set and acknowledged handing out of students learn completely.

According to Suprijono the learning model snowball throwing is a learning model that gives experience to students through integrated learning using the process interlocking in a situation and the context of communication natural both social, science, the ordinal, and environment promiscuity (Suliswa et al., 2017). Formed a group that represented the head of the group to get the job of teachers and each student makes a question that formed like a (paper questions) and thrown in other students each student answering questions from obtained. One of them is available for Scientific learning because this model involves many students and teachers This is just a guide at the start of the course. The snowball throwing model is interpreted as a snowball, in the learning process students will create a The teacher asks questions on paper, then on paper Contains questions shaped like a ball (Hamdayama, 2014). Excess of learning model Snowball Throwing: 1) express, memory 2) centered on, students learning 3), active learners and 4) increased science learning achievements (Isnawan & Zahroni, 2016). In addition to the learning model snowball throwing in learning will meaningful when supported by the media learning concrete. Media learning concrete is media learning cheap and affordable, will attract and motivate students for more studies matter.This media can be used to develop skill see and evaluate what is seen, prepared variation an interesting and change rate of learning about the staple of a subject or issue. From the above information, it can be seen that kind of classroom of throwing snowball learning model very different from conventional done by teachers in schools.

There are several types of snowball throwing games as a learning model Advantages or advantages of involving all students According to excellent research Kusumawati, (2017) (1) The existence of students actively participating in the learning process; (2) Yes allow students to develop critical thinking skills because they have the opportunity to ask questions and ask questions other learners answer questions; (3) Preparing students all kinds of possibilities because they don't know what is asking by where are the other groups; (4) educators should not be overly concerned Learning media because students are directly involved in practice; (5) Learning becomes more effective and efficient; (6) Attitude, able to realize students' knowledge and skills Kusumawati, (2017); (7) The learning atmosphere is interesting because students like to play With how to throw paper balls at other students (Siahaan, Damanik, et al., 2021).

Apart from its advantages, of course, there is a snowball throwing model there is a drawback or weakness. According to Huda, the weakness of this model is Articles written by Kusumawati et al. There are: (1) Very successful in learning determined by the student's ability to understand the material Few proficient students. This can be seen from the question Students usually only make material that they describe or like, examples are correct; (2) The team leader who cannot serve Well, of course, this is a bad thing for other members to understand the material So it took a long time for students to discuss the material Courses (Kusumawati, 2017); (3) No quizzes or personal prizes Small groups so that when students sit in small groups their motivation will decrease Cooperation, but it does not rule out the teacher to add Give individual and group tests; (4) Need to use The division of study time is not small; (5) Students tend to be naughtily Making a fuss (6) Due to a group order, the classroom was very noisy Produced by teaching school students (Kusumawati, 2017).

The difference is visible from syntax and methods used in the learning process. Learning model conventional more likely to teachers who are active in the process of learning, teachers transfer just like that Knowledge possessed to students regardless of the mental student. This condition, passive in learning to students in classes and tends to be quickly bored. In contrast to the throwing snowball learning model, the process of learning allowed to act in student learning activities through discussion. Starting from activities explore the knowledge and experience of students, discuss the group to experiment and observation, explained the word itself, implementing the concept with a written test, and summarized the learning process carried out. Learning this is what the students wanted, they are given the freedom to explore the capability of being they have. The purpose of this study is to find significant differences between study results science students learned through learning model cooperative Snowball Throwing with students learning conventional learned through a primary school plus v in Tigabalata.

B. METHODS

The kind of research being done is research aimed at the cost-effectiveness experiment to test a theory/concept/model using applying the treatment of one group of the subject of research using a comparison group commonly called the control group. This study using design quasi-experiment non-equivalent control group *design* this design is almost the same as the pre-test-post-test control group design, except that the experimental group design and the control group were not randomly selected (Mäkelä, 2017). In table 1 (Habiby, 2017).

In this research, populations that were used were those coming to primary school in Tigabalata plus grade 5, Districts Jorlang Hataran academic year 2019 / 2020. To collect samples using a technique of random sampling. Or grade 5 (a) 30-member students as a group of experimentation and grade 5 (b) which consisted of 35 people students as the control group.

This study put study results on the subjects of science as a variable dependent. While the learning model is used as independent variables. Learning model consisting of two the learning model Snowball Throwing and the conventional learning model. The data collection method used in this study is the method test. Test methods used to obtain the results of the material science learning concept measurements. The test used is the test double objectively in the form of an option. This test was given after conducted treatment on class experiment and grade control at the end of those who used to test the hypothesis. Research instruments that will be used to gather the results of the student learning are based on a lattice grating that has been made.

The results of learning science the analysis using test-T before data analysis do first tested precondition analysis normality to scatter test data, and homogeneity variance test. For a test of normality to scatter the data by test Chi-square, test homogeneity variance use test-F. In the process of analysis of data using Microsoft office excel 2007.

Table 1. Research Design *Non-Equivalent Control Group Design*

Class	*Treatment*	*Post–test*
Experimental Group	X	Q1
Control Group	–	Q2

Information: X = *treatment* against the experimental group, – = do not accept *treatment,* Q_1 = *post–test* against the experimental group, Q_2 = *post–test*

Based on table 2, look t_{count} greater than the t_{table} 2,562 > 2,000 at degrees freedom 82. It can be concluded with the ho saying "that there is no difference. Significant science students study results between learned by applying snowball throwing learning model apply students learning by applying conventional students in primary school class v plus Tigabalata, Jorlang Hataran **rejected** and Ha said " is a significant difference between study results science students who learned with apply learning model snowball throwing with students who learned by applying to learn conventional on the kid's grade school in Tigabalata plus, in Jorlang Hataran ", ***accepted***.

C. RESULT AND DISCUSSION

The average score of the scientific study results in the experiment with two categories of very good (M = 83,50) and the control group score the medium category are on average (M = 71,20). A sort of descriptive set can be conveyed that the impact of the snowball throwing superior compared with the conventional science learning outcomes of Tigabalata plus in primary school, Jorlang Hataran district. Conducted before the testing of hypotheses by test-T, first undergone a prerequisite for the distribution of research conducted test hypothesis, the test and the homogeneity of normality.

The normality data was undertaken on study results control group experiment and science. Based on the analysis of the data that has been conducted using formula chi-square, obtained the results of the group learn science experiment and the control group distributed normally. The homogeneity variance using test-F known variance homogeneous both groups. To test hypotheses using the test-T sample independent (does not correlate) with the formula polled *variance*. Recapitulation of the results of the test-T between the experiment and the control group presented in Table 2.

Table 2. Data Anaslysis Tabel for Hypotesis Testing

Class	Variance	N	Db	T_{Count}	T_{Table}	Conslusion
Clas Experimental	22,75	30	82	2,562	2,000	H_a accepted
Class Control	28,99	35				

Based on the results of research and the testing of hypotheses relating to study results science students grade 5 primary schools plus in Tigabalata, sub-district Jorlang Hataran especially to the matter light by using learning model Snowball Throwing or by using learning conventionally. To know the influence of learning model snowball throwing in the lessons science students grade 5 primary schools can be seen from its mean value study results group experiment the average value of the control group. Because the value of average study results— Science students the X experiments = 83,50 higher than the average score study results— Social students the control group x = 71,20, have concluded that Snowball Throwing learning model can optimize science study results. The test-T hypothesis submitted to research shows that differences study results in science students between the learning to use Snowball Throwing learning model with the conventional learning to use learning. It is based on the results of the analysis that has been done. The learning model snowball throwing for the study of science students has value statistics t_{count}= 2,562 with a significant 5 percent standard. Statistically, this research result indicates that learning model Snowball Throwing and learning model conventional differ significantly under outcome learn science students at significance 5 % standard. The result of this research has proved, the hypothesis advanced by that there are

significant differences in learning outcomes science students between learn to use learning model snowball throwing with the learning to use conventional learning model.

According to Suprijono model throwing snowball technique developed under a viable model of learning which he approaches contextual (CTL) (Rohani et al., 2018). Which according to snowball throwing their gods have no means "snowballs revolving" can be interpreted as a model of learning using a ball ask of paper on which rolled round shaped in balls is then cast in turns of a fellow member of the group. Seen from an approach that is used resting place of learning science model snowball technique throwing communicative approach this blends, considered that, and skills the process. Significant differences between learning study results learning model snowball throwing by learning the conventional one can be caused by differences in syntax a source of learning and teaching method of both learning. Syntax learning model snowball throwing clear and consistent namely; (1) communicating goals and motivation, (2) information, (3) the students in the group, (4) guiding working group and learning, (5) evaluation, (6) give an award. This is following the education curriculum unit (KTSP) more lead to student learning activity in fulfilling the interests of the processes and study results. While learning conventional not using syntax definite, only adjust the teacher at the time of learning students. So students tend to only as passive learning.

When viewed from his philosophy learning model snowball throwing is one of the learning models cooperative learning in the model where learning is a cooperation between the mutual dependence among students in one class other. Learning model Snowball Throwing more alert to train students to receive messages from someone else and delivered such message to his friend in a group of (Siahaan, Damanik, et al., 2021). Learning model Snowball Throwing assisted media concrete would ease teachers to any information to students in learning. According to Siahaan, Haloho, et al., (2021) said media concrete is "media native of an object that helps teachers in a clear subject matter to participants". In learning activities teachers deliver the first material which is to be presented to students, it is meant that students prepare to follow the process of learning. Next students form a group consisting of four to six a person who is a mixture of according to the level of the ability, sex and call each the head of the group to give an explanation about which matter is discussed. The head of the group explains each material that has been delivered by the teacher by making use of concrete media that have been provided on each group (N. Manurung et al., 2019). Then every group makes inquiries about which matter is the head of his group had been made very clear. Here students are expected to have skill in making and answer a question that is inputted them together through a game in form and throw snowballs. Next teachers confirmed the answers of the students (Suhartini et al., 2019).

In contrast to that of the conventional kind of classroom teachers and has only been centered on authoritarian which includes the provision of information by the teacher, a question and answer session, the imposition of duties by the teacher, the performance of duties by students to the end the teacher felt that what has been taught understandable for their students (Ananda et al., 2020). Conventional rarely involving learning enabling knowledge the beginning and rarely motivate students to a process of their knowledge. Conventional learning is still based on the assumption that knowledge can be moved in their entirety of the mind of the teacher to the mind of students, so cannot develop the process of learning in an optimum manner.

The learning model snowball throwing optimally contribution for students to relate to information and knowledge was originally for learning whether it is of a book, learning experience and, class discussions so that students are starting to construct, concepts and learned to reflect material (Ginting, 2017). The learning model snowball throwing in learning made it

students is easier to understand a concept so that the result of better student learning. Learning model Snowball Throwing has phase demanding the students to be more active in digging and enrich the understanding of the students learned concept so can increase the student learning (Gani et al., 2017).

Based on measures in throwing, the snowball learning model can be described that students are more active in the learning process so that the result is increased student learning. Sudjana stressed that study results are capability obtained after learning (Putu et al., 2017). Seen from the comparison between learning model Snowball Throwing and learning model conventional it this is in line with the result of this research is the study results learning model snowball throwing higher compared to the conventional learning model (Nugroho, n.d.). Based on the show that learning comparison in theoretical Snowball Throwing superior to the conventional learning model. Nevertheless, not all models, applied learning is very good hence teachers in this has to be smart to be enjoyable learning model that learning and students becomes active in learning activities .

The result is consistent with the previous studies Siahaan, Damanik, et al., (2021) titled Implementation of Quantum Teaching Models and Snowball Throwing Methods on Chemical Learning Interest and Achievement. Research results obtained the (1) difference between the ability to who had with learning model snowball throwing using learning model student team achievement divisions (STAD). It is proven with the scoring average of each 79,067 and 70,233. This is to be supported by statistical analysis inferential on the results of the Fh 18,81 > Ft of 4,01 with a standard significance of 5%. (2) difference between the ability to who has an interest learn tall and that has interests learn low. Proven the average score of each 79,533 and 69,767. This is supported by analysis statistics inferential on the results of Fh 22,99 > Ft of 4,01 with the economic situation of significance 5 % .(3) there is the interaction between learning model and interest learned in his effect the ability, look of its results Fh of 4,88 > Ft of 4,01. So that can be concluded that his students who had with learning model snowball throwing better than who had with learning model student teams-achievement divisions (STAD), the ability his students who have interest learn high better than to their students who have interest learn low, and there is the interaction between learning model and interest learned in his effect the ability. This research is in line with the results of research relevant done by Nimas Permata Putri and whose theories support among others Farhan , Debayor, and Akhiriyah, (2011) title practicing snowball throwing to improve the quality of learning science class students V primary school Kalibanteng, Kidul.

Next, the results of research (Khumairo et al., 2021) titled The application of the snowball throwing cooperative model in science studies learning for grade v students of elementary school. Of both, the survey all have maximum results. The writer as researchers also expects the same result as the two researchers.

Snowball Throwing learning model was the learning in each stage school because science can be carried out flexibly and meet the real needs of teachers and students. Seen of the dimensions of the application of this model teachers extending insight and improve the creativity of teachers in designing learning activities. Dimensions and students in the advantages as this strategy (1) increased the motivation to study because they engaged very active in learning, (2) helped develop scientific attitude students, (3) learning into something meaningful.

D. CONCLUSION AND SUGGESTIONS

Based on the analysis of data there is a significant difference between learning outcomes science students who learned by using a model of learning snowball throwing with students who learned using conventional learning on subjects science with the matter of light in the same lesson even semester. The analysis of that research shows t_{count} = 2,562 > t_{table} = 2,000 and supported by the fact the average score obtained between a student who got treatment learning model *Snowball Throwing* that is *X* = 83,50 > *X* =71,20 learning conventionally. So we can conclude the learning model is the snowball throwing for the study of science students V primary school plus, in Tigabalata sub-district Jorlang Hataran.

Based on the research and maybe put forward some suggestions as follows. Throwing snowball learning model should be developed and implemented in learning in schools so learning the optimal qualified and student learning. Teachers should be able to become a facilitator in learning and develop diverse sources of learning especially snowball throwing in the implementation of the kind of classroom learning to be meaningful and it is fun for students. For consideration for the government in increasing teacher professionalist relates to the development of learning, informed and training the learning model snowball have been throwing to exert an influence upon learning outcomes students will add perspectives related innovative kind of classroom teachers. Schools should be prepared to help learning facilities of learning innovative, so it could give a positive impact on the student learning.

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